Exponential Functions Revisited

Objectives.

Exponential Functions

- *Function output changes at a proportional rate*
- *Definition as functions of the form* $f(x) = ab^x$
- *Finding the formula of an exponential function from a table*
- *Increasing (at an increasing rate) vs decreasing (at an increasing rate) exponentials*

Modeling with Exponential Functions Revisited

- *Modeling cooling coffee with* $f(x) = ab^x + c$
- *Identifying vertical shifts from* $+c$ *terms*
- *Defining long term (end) behavior, introducing arrows to infinity*
- *Discussing the concavity of exponentials*

The Special Number e

- *Varying* b *in* b^t *is a horizontal scaling*
- *Definition of* e
- *Average rate of change of* e^t *approaches the function value*
- $f(t) = e^t$ *is invertible. Name its inverse* $f(t) = \ln(t)$

Learning outcomes:
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